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# Increasing Creativity and Community Responsibility through the Interactive Learning at the Schools of Architecture in Jordan

**Bushra Zalloom**<sup>1</sup>

<sup>1</sup> Technical Engineering Department, School of Architecture, Zarqa University, Zarqa 13132, Jordan

bzalloom@zu.edu.jo

**Abstract.** This paper sheds light on the application of non-traditional methods during the teaching of architecture courses at the Jordanian universities, and shows its effect in refining the students' personality and increasing their community responsibility. The creativity in architecture depends on the ability to design a unique work that balances the architectural vision and the users' requirements. This comprehensive understanding of design raises many questions about the contribution of architectural education in the refinement of interactive thinking for the students of architecture - the architects of the future - and in the development of the students' sense of community to recognize the design process as a creative process that meets the needs of society. Therefore, it was necessary to develop some teaching methods in architecture and design that focus on the social dimension of the built environment. This paper aims to create interactive learning environments that empower the youth and enrich their personalities at the schools of architecture in Jordan. Traditional teaching methods, based on memorizing and using the existing media such as diagrams or pictures, have proven deficiency in transferring the architectural knowledge from the teacher to the students. However, the proposed interactive methods will bridge the gap between theory and practice by encouraging the students to interact with the design environment and members of the community to understand their needs prior starting the design. In this research, the concept of interactive learning is not limited to the use of the new interactive technology such as multimedia software, and Virtual Reality, but it is widen to include the notion of the human interacting with the designed environment by visiting the site, communicating with the users of the space, and enhancing the public participation.

## 1. Introduction

The role of the teaching institutions has been questioned and blamed for “killing” creativity” [1],[2]. Creativity becomes a fundamental skill in education [3], which needs to be developed to prepare future generations, so that they can survive and thrive in the twenty-first century [4]. Modern architecture schools in the developed countries call for creativity in education through the application of the principle of interactive learning, learning by doing, and through the creation of non-traditional solutions based on innovation, investigation, research, and interaction with the built environment in all design phases [5]. However, the architectural courses at the Jordanian universities rarely focus on the development of this aspect among the students.



Lozano (1990) discussed the notion of separating the architects from their society and stressed that the architects are not prepared for the design for the community [6], which sometimes explains the inability of the architects to find contemporary solutions that respond to the users' lifestyles. The value of involving people as 'users' or 'participants' in the design process is increasingly becoming a point of debate. Moreover, the direct communication with community members and understanding their needs are crucial [5], as they know their needs and are able to express their requirements. They are the source of information, and for them, the designs are developed. Increasing creativity and community responsibility calls for preparing architects and planners who consider the 'users' of the place as the best experts in the field [7]. This social approach of architecture that meets the needs and desires of the community is a global approach to embrace the concept of sustainability in the architectural projects [8].

This paper describes various techniques that enhance the interactive learning environment for teaching architecture which focus on the importance of involving different people in design process and maximizing the value of contributions of various members at different stages of design [9]. Traditional teaching methods, which based on memorizing, confirmed insufficiency in transferring the architectural knowledge from the teacher to the students [7]. On the other hand, the proposed interactive methods will bridge the gap between theory and practice by inspiring the students to interact with the design environment and members of the community to understand their needs prior starting the design. It includes the notion of the human interacting with the designed environment by visiting the site, communicating with the users of the space, and enhancing the public participation. The creation of innovative methods of teaching at the schools of architecture away from the traditional teaching styles that based on lectures, instructions, and sitting for long hours in the architectural studios is imperative [5]. Innovative teaching methods, which stimulate creativity and relate to the needs of the society, are essential to develop the learning environment [4]. Architectural education requires the development of special creative abilities, as the main goal of the profession is to produce spaces that are vibrant and full of different human activities [10]. Therefore, professors have to develop their methods in teaching to enhance the creativity of their students. Conventional media - papers, pictures, and videos – are ill suited to represent these processes in ways that make them easy to visualize [11].

The following sections discuss two approaches of the interactive learning that increase the creativity and the community responsibility among students, the author implemented both of them at the schools of architecture in Jordan. The first approach calls for the human interaction with the designed environment by taking the students away from the university studios, and the second approach calls for conducting various workshops to enhance the social dimension of the built environment during all design stages.

## **2. The first approach: The human interaction with the designed environment**

Interactive active learning method involves various participants in the design process that aims to increase their input at diverse stages of design [6],[8]. When teaching urban design course for the fifth grade in the school of Architecture at one of the Jordanian universities, the researcher applied non-traditional techniques that stimulate the creativity of the students by going out to the field, away from the university studios, interacting with the members of the society, studying their needs and understanding their desires. This stage followed by proposing different solutions and discussing them with the community, and finally, implementing the selected design on the ground in cooperation with the community members, local institutions, and the municipality. The following paragraphs summaries the most important phases of this approach:

### ***2.1. Phase one: Defining the area of study and the urban problems***

To understand the human needs, the designer should visit the site many times, observe the people attitude, and understand their culture, needs, and motivations. After that, he can go back to his office

and start his design. Accordingly, this stage started with the site selection, after selecting a specific urban area within the boundaries of Greater Amman Municipality (GAM), the teacher divided the class into five groups -five students in each group; and each group selected a specific zone within the area of study. The students collected all the required information and studied the existing plans issued by the Greater Amman Municipality to review the status of the area. After that, it was necessary to visit the site several times and document the actual situation, which cannot be understood by the students through the traditional analysis of the plans and charts. During the site visit, the students conducted many personal interviews to collect comprehensive information about the area, study the physical condition of the buildings, realise the built environment, understand the social and economic situation of the residents, and appreciate all their needs.

The site visit and the direct contact with the residents of the area provided the students with a deep understanding of the built environment. Students used all technical and technological means to document the site in an unconventional way by photographing with regular cameras and aerial video cameras to obtain aerial photographs and distinctive images of the urban fabric.

### **2.2. Phase two: Organizing a workshop with the local community**

Decision-makers from GAM, the head of the local committee, other specialists, and a selected group of residents who showed interests in participation attended a public workshop at the university auditorium (figure 1). During the workshop, the students presented the results of the survey in an integrated manner, taking into account the legislative dimension and their effects on shaping the outdoor spaces of the city. They highlighted the most important urban problems facing the region such as, the lack of a continuous network of sidewalks, the lack of parking spaces, the absence of green areas, the need for maintenance for some buildings' facades, and other urban problems, then, they presented the needs of residents which must be taken into consideration during the design stages.



**Figure 1.** A workshop with the local community (Source: the researcher 2016)

This workshop helps the participants to understand how the designers/students recognised their neighbourhood and realise their needs. At the same time, it helps the designers to explore the priorities of the other parties, the best practises, and the legislations and design concerns that should be considered.

### **2.3. Phase three: The design development**

In this phase, the students are mainly concerned to take the problems identified in phase one and the design requirements that presented in phase two, and then relate them to the future vision for the built environment. Based on the outcomes of the workshop, the students studied and understood the site to develop an appropriate design that fulfils the residents' needs and meets their desires, thus, ensures the sustainability of the proposed design which built on the cultural, economic and social dimensions.

The main point of departure was to try to develop an interactive learning milieu to bridge the gap between the abstract representation and the practical proposed solutions for the existing condition. The current multimedia allows the students to do this in a novel way by allowing dynamic changes to the design parameters.

#### ***2.4. Phase Four: students and decision-makers shaped the future of the city***

During the design stage, the architect should present his proposal for the residents through public participation sessions, to listen to their feedback, then go back again to develop the design to suit the users' needs. Therefore, the University organized a workshop for the second time during the semester, where the students presented the design proposals that aim at raising the level of the built environment and enhancing the quality of life at the area of study. The workshop was attended by the deputy representative in the Jordanian Parliament, a group of decision-makers in GAM, and a number of specialists, academics and the residents (figure 2). The discussion continued for several hours, during which the decision makers expressed their admiration for the performance of students and their design proposals, and promised to implement them, which had a positive reflection on the performance of the students.



**Figure 2.** Shaping the city with the decision makers and professionals during a public workshop (Source: the researcher 2016)

Creating a meaningful dialogue between the decision-makers and the students -the architects of the future- has a great impact in refining the students' personality. This impact was obvious in the students' attitudes and reactions during these workshops and their enthusiasm to proceed with the development of their proposed designs. This interactive experience with residents and decision makers prepare the students and qualify them for the next stage of their careers after graduation.

#### ***2.5. Phase five: Organizing an environmental campaign to beautify selected zones***

In cooperation with the GAM, the University organized an environmental campaign to beautify the pedestrian corridors of the study area. The campaign included 32 students and volunteers in addition to a group of the residents, which contributes to activating the role of the local community and motivating students to implement their designs and beautify their city. The campaign included painting the walls and doors in colours that suit the local environment and emphasizes the identity of the area and planting basins with flowers and local trees that had been given by GAM (figure 3).



**Figure 3.** Planting and painting the pathways (Source: the researcher 2016)

### **3. The second approach: Workshops to enhance the social dimension of the built environment**

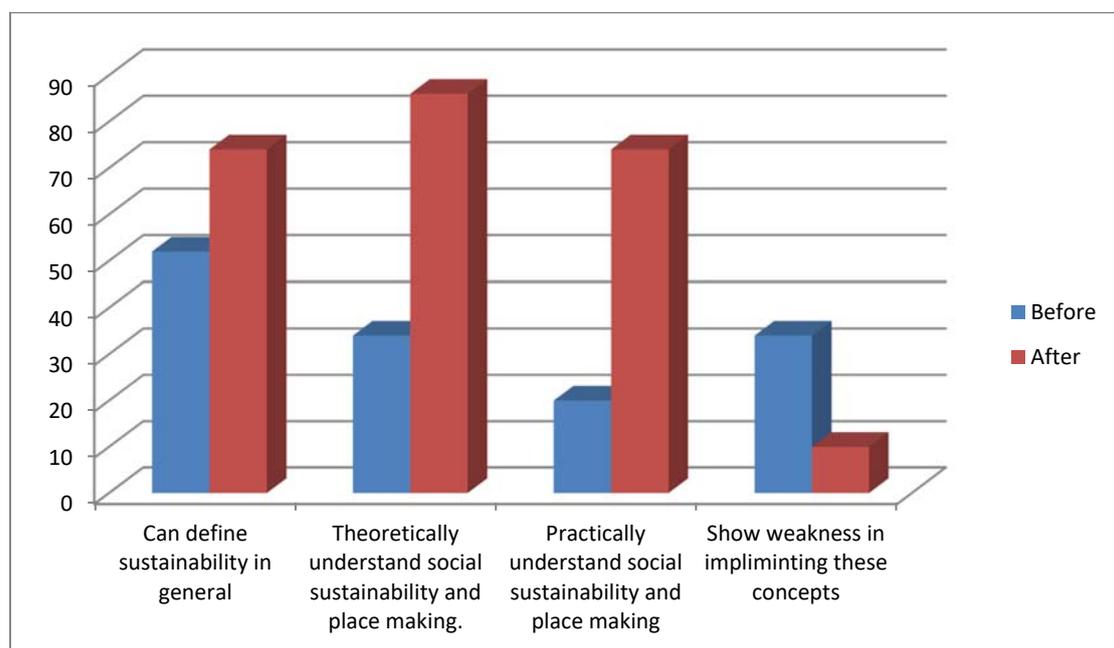
Workshops methods are used to examine the students' consciousness of how to create liveable places that are socially sustainable, as few practical resources directly address this question. The researcher asked the students of architecture at one of the Jordanian universities this question during a workshop about sustainability that conducted in October 2016; about 60 students were selected to participate in the survey by writing their answers on papers then discussing them with other participants. About 52% of them can define the general meaning of sustainability, but they could not identify its social part. About 34% of the selected group understood both concepts of social sustainability and place-making, but they could not give any ideas how to use them in creating liveable spaces. Thus, they did not know how to put the place into practice through the art of place-making. Only 14% were aware of these definitions and could answer the question by proposing some ideas that may help in creating liveable spaces that are socially sustainable.

The mentioned results confirm that the students of architecture who participated in the workshop are not aware of the concept of sustainability, specifically the social sustainability. Their thoughts were limited to the description of the environmental aspects, the climate, the building orientation, the materials that are used for isolation, besides some proposals that related to the economics. Accordingly, the researcher decided to enhance the students' knowledge about sustainability, social characteristics of space, and the art of place-making by conducting a series of workshops during the academic year of 2016/2017. The first workshop was about the environmental and the economic aspects of sustainability, and the second workshop was about the social aspects of sustainability (figure 4). Moreover, two lectures were made to highlight the logic of place-making and the meaning of liveable space.



**Figure 4.** Workshops to enhance the students' awareness about sustainability (Source: the researcher 2017)

At the end of the second semester, on June 2017, the researcher re-conducted the same survey and asked the participants to suggest practical ideas that help in creating liveable places that are socially sustainable. This time the results confirm that the students became more conscious of the social characteristics of the place and their ability to suggest creative ideas for creating sustainable, liveable spaces increased. About 60 students participated in the survey, 74% of them became familiar with the concept of social sustainability and the concept of place-making, thus could answer the question by proposing some ideas that may help in creating liveable spaces. About 16% of the students still face some problems in putting these concepts into practice. This group showed some weakness in their ability to bridge the gap between theory and practice, and they still focus mainly on the environmental aspects with limited conscious for the social feature. Only 10% could not define the meaning of social sustainability, their limited capability in answering the question possibly because they did not attend all lectures and workshops. Figure (5) shows the result of the survey before and after the workshops.



**Figure 5.** The results of the survey before and after the workshops (Source: the researcher 2017)

The research confirms that workshops and lectures are essential in enhancing the students' knowledge about the terms of social sustainability and place-making. This will help them to think outside the box when designing the public spaces. Through all design stages, the social features should be considered, and the human needs should be appreciated. The research highlights the importance of enhancing the education level especially for the students of architecture and increasing their ability to design creatively. This can be achieved by teaching them various courses about the art of place-making, and help them to think about the users of space, during all design stages.

Furthermore, the survey confirms that the proposed social model is an easy tool that could be used by architects and professional when designing or judging the public spaces, and it enhances the architect's ability to understand the social characteristics of the place by referring to its users.

#### 4. Conclusions

This paper discussed practical ways that help in transforming the traditional educational process that built on studying at the university studios into a creative and interactive process that reflect the students' thinking and meets the needs of the users. It shows how the architectural designs can turn from drawings and rigid lines to a tangible reality that the eyes catch and the senses feel. This practical experience based on two different techniques, the first technique built on the human interacting with the designed environment, and the second technique support making workshops that enhance the social dimension of the built environment. Both techniques backing the interactive learning approach that focuses on the development of the social responsibility and the human sense of the students, both of them linked between the students on the school, the community, and the decision-makers, so they all contribute to bridging the gap between theory and practice.

The interactive teaching process has a positive impact on building the personality of the students and enhancing their ability to put forward implementable design ideas. It also helped to stimulate the creative side of the student by developing their abilities and skills in communicating directly with the members of the community and understanding their needs, and finally, collaborate with decision makers and contribute to solving the urban problems.

The creative teaching methods that develop the social responsibility of the students have doubled their abilities to explore the urban problems and to address the needs of users of the urban spaces and helped them to understand their needs. The creative teaching methods help the students to feel the effective role in developing the society and solving the urban problems in a realistic and practical way that can be easily implemented. Furthermore, the volunteering process in the environmental campaign organized by the University in cooperation with the Greater Amman Municipality increased the humanitarian side of the students' personality and emphasized their active role in shaping the city in an innovative way.

The research recommends some strategies that help in creating liveable public spaces. These strategies can be summarised as follows:

- Educate the locals, students, architects and urban designers to understand the meaning of the sustainable city, and how to create liveable places that are socially sustainable.
- Focus on human needs while designing the public spaces. When the designer understands the users' needs, aspirations, and motivations, he can create spaces that fulfil their desires.
- Public participation is essential to understand the people needs, their culture, and requirements.

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